

Amended patent claims

1. An aqueous polyurethane formulation comprising from 10 to 60%
5 by weight of at least one polyurethane A which is composed of
 - a) at least one organic isocyanate having no lateral alkyl groups [monomers I],
 - 10 b) if required, at least one organic isocyanate having at least one lateral alkyl group [monomers II],
 - c) at least one dihydric or polyhydric alcohol having a
15 number average molecular weight of from 400 to 6 000 [monomers III],
 - d) at least one dihydric or polyhydric alcohol having a number average molecular weight of from 62 to 399 [monomers IV],
 - 20 e) at least one carboxylic acid having at least one hydroxyl group [monomers V],
 - f) no or one or more polyamines having at least two >N-H
25 groups [monomers VI],
 - g) no or one or more compound having at least one alcoholic OH group and at least one >N-H group [monomers VII] and
 - 30 h) no or one or more monohydric polyetheralcohols [monomers VIII],

with the proviso that the amounts of the incorporated monomers I to VIII are such that the

35 $(-\text{OH} + >\text{N}-\text{H})/\text{NCO}$ equivalent ratios for the incorporated

monomers III/monomers I + II are from 0.1 to 0.75,

monomers IV/monomers I + II are from 0.2 to 0.8,

40 monomers V/monomers I + II are from 0.05 to 0.5,

monomers VI/monomers I + II are from 0 to 0.4,

monomers VII/monomers I + II are from 0 to 0.4,

monomers VIII/monomers I + II are from 0 to 0.2 and

45 those for the sum of the monomers III to VIII/monomers (I+II) are from 0.80 to 1.25, the total amount of monomers I and monomers II contains from 50 to 100 mol % of monomers I and

from 50 to 2 000 mmol of the carboxyl groups of the incorporated monomers V per kilogram of polyurethane A are present in anionic form in the aqueous formulation and the dispersed polyurethane particles have a particle size of from 5 2-15 μ m..

2. An aqueous polyurethane formulation as claimed in claim 1, wherein the monomer I is selected from hexamethylene diisocyanate (HDI) and 4,4'-diisocyanatodicyclohexylmethane.
- 10 3. An aqueous polyurethane formulation as claimed in claim 1 or 2, wherein the total amount of monomers I and II contains from more than 90 up to and including 100 mol % of monomers I.
- 15 4. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the monomer V is selected from lactic acid, dimethylolpropionic acid, dimethylolbutyric acid, trimethylolacetic acid, hydroxypivalic acid and 20 glucuronic acid.
5. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the monomer V is selected from lactic acid and dimethylolpropionic acid.
- 25 6. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the monomer V is dimethylolpropionic acid.
- 30 7. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the monomer VI is selected from ethylenediamine, 1-amino-3-aminomethyl-3,5,5-trimethylcyclohexane and 4,4'-di(aminocyclohexyl)methane.
- 35 8. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the monomer VI is 1-amino-3-aminomethyl-3,5,5-trimethylcyclohexane.
- 40 9. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the >N-H/NCO equivalent ratio for the monomers VI/monomers (I + II) is from 0.02 to 0.4..

10. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein ammonium NH_4^+ is present as the opposite ion of the carboxyl groups of the incorporated monomers V.

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11. An aqueous polyurethane formulation as claimed in any of the preceding claims, wherein the reaction of the monomers, is carried out in the absence of metal organyls.

10 12. An aqueous polyurethane formulation as claimed in any of the preceding claims, obtainable by reacting the monomers in the presence of a cesium salt.

15 13. The use of an aqueous polyurethane formulation as claimed in any of the preceding claims for coating textiles, leather, metal, plastic, glass, wood, paper or board.

20 14. A textile, leather, metal, plastic, glass, wood, paper or board coated with an aqueous polyurethane formulation as claimed in any of claims 1 to 12.

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